REMARKS

Reconsideration and allowance of this application are respectfully requested in light of the above amendments and the following remarks.

Support for the amendments to claims 16-20 is provided for example in Figs. 5A and 5B and embodiment 1 of the invention disclosed in the specification. (It should be noted that references herein to the specification and drawings are for illustrative purposes only and are not intended to limit the scope of the invention to the referenced embodiments.)

With regard to the 35 USC 112, first paragraph, rejections, it is noted that the recited: (1) "information of an arrangement of a plurality of time slots" is equivalent to "pattern information" disclosed in, for example, paragraph [0133] of the published specification and (2) "mutually different arrangement density in a frequency domain or a time domain" finds support in, for example, Fig. 8 and paragraph [0139] of the published specification. The subject matter of claim 17 finds support in Applicants' disclosure of a "pilot pattern for each time slot may be set beforehand and fixed," as provided in paragraph [0139] of the published specification. The subject matter of claim 18 finds support in Applicants' disclosure of a "multiplexing section 190 multiplexes transmission data 1 to K, pattern information, assignment information and pilot symbols according to the pilot pattern on a per timeslot basis," provided in paragraph [0136] of the published specification. Accordingly, the Applicants respectfully submit that the subject matter of claims 16-20 finds support in the original application and does not introduce new matter. Therefore, withdrawal of the 35 USC 112, first paragraph, rejections is deemed to be warranted.

Claims 16, 17, 19, and 20 were rejected, under 35 USC §103(a), as being unpatentable over Fukuda (US 6,553,038) in view of Nilsson (US 2003/0022685). Claim 18 was rejected, under 35 USC §103(a), as being unpatentable over Fukuda in view of Nilsson and well-known prior art. To the extent that these rejections may be deemed applicable to the amended claims presented herein, the Applicants respectfully traverse as follows.

Claim 16 now defines a transmitting apparatus that transmits information of an arrangement of time slots each having pilot signals of pilot patterns. Each of the pilot patterns has a different arrangement density in a frequency domain or a time domain. The transmitting apparatus transmits, in each time slot, the pilot signals of the pilot pattern according to the arrangement of the plurality of time slots. The claimed subject matter provides an advantage of reducing the amount of feedback information required to indicate the number and position of pilot signals within a time slot (see specification page 3, line 17, through page 4, line 12, and page 5, lines 4-8).

Fig. 8 illustrates an exemplary, non-limiting, embodiment of the invention having eight unique pilot patterns. For each pattern, the horizontal direction represents the time domain and the vertical direction represents the frequency domain. Thus, patterns 1-3 have one pilot symbol arranged in the frequency domain, patterns 4-6 have three pilot symbols arranged in the frequency domain, and patterns 7 and 8 have pilot symbols continuously arranged in the frequency domain (see specification page 19, line 26, through page 20, line 9). Similarly, patterns 1, 4, and 7 have one pilot symbol arranged in the time domain, patterns 2, 5, and 8 have three pilot symbols arranged in the time domain, and patterns 3 and 6 have pilot symbols continuously arranged in the time domain (see specification page 20, lines 10-19). Thus, each of

the eight patterns has a different arrangement density for the combined time and frequency domains and each of the eight patterns may be uniquely identified to a communicating party in a feedback message using a three-bit binary value (see specification page 21, lines 22-26).

The Final Rejection acknowledges that Fukuda does not disclose the Applicants' claimed subject matter of pilot patterns having different arrangement densities in a frequency or time domain (see Final Rejection page 4, second paragraph). To overcome this deficiency, the Final Rejection proposes that Nilsson discloses, in Fig. 2, that signals in a time slot have a block of pilot symbols followed by a block of data symbols (see page 4, third paragraph).

Nilsson's Fig. 2 appears to disclose the repeated sequence of a block of pilot symbols followed, in the time domain, by a block of data symbols. However, considered as a whole, Fig. 2 illustrates only a single arrangement density of pilot signals in the time domain; more specifically, three of six slot blocks seem to be allocated to pilot signals. Thus, Nilsson does not disclose the Applicants' claimed subject matter of multiple pilot patterns that each have different arrangement densities.

Further, even if slots 36, 38 and 40 are considered individually, the arrangement density of pilot block 36b with respect to data block 36c appears to be identical to the arrangement density of pilot block 38b with respect to data block 38c and the arrangement density of pilot block 40b with respect to data block 40c. Thus, even if it were assumed *arguendo* that each of Nilsson's slots 36, 38, and 40 correspond to the claimed pilot patterns, Nilsson still would not disclose that such pilot patterns have different arrangement densities of pilot signals.

In summary, regardless of whether Nilsson's Fig. 2 is deemed to illustrate a single pilot pattern having one arrangement density of pilot signals or three pilot patterns that each have

identical arrangement densities if pilot signals, these features are not the same as the Applicants' claimed subject matter of pilot patterns having different arrangement densities in a frequency or time domain.

Moreover, it is further noted that, as generally recited in amended claims 16, 19 and 20, features of the instant claimed invention include: (1) transmitting information of an arrangement of a plurality of time slots having pilot signals of pilot patterns, each of the pilot patterns having a mutually different arrangement density in a frequency domain or a time domain, and (2) transmitting, per time slot, the pilot signals of the pilot patterns according to the arrangement of the plurality of time slots. The claimed subject matter advantageously prevents reduction of information communication efficiency when pilot symbols are transmitted and minimizing the influence of feedback information on channel capacity.

By contrast with the claimed invention, Fukuda discloses transmission of signals of a slot structure in time division multiplexing (see Fukuda, col. 16, lines 22-25). Nilsson discloses a time slot structure for transmitting a data symbol block after a pilot symbol block, in succession (see Nilsson Fig. 2 and paragraph [0019]).

However, Fukuda and Nilsson both fail to disclose the Applicants' claimed subject matter of transmitting information of an arrangement of a plurality of time slots having pilot signals of pilot patterns, each of the pilot patterns having a mutually different arrangement density in a frequency domain or a time domain, and transmitting per time slot the pilot signals of the pilot patterns according to the arrangement of the plurality of time slots.

Accordingly, the Applicants submit that even if Fukuda and Nilsson were combined as proposed in the Office Action, the result still would lack the above-noted features of claim 16,

and thus, these references, considered individually or in combination, do not render obvious the subject matter now defined by claim 16. Independent claims 19 and 20 similarly recite the above-mentioned subject matter distinguishing apparatus claim 16 from the applied references, although claim 19 does so with respect to a method. Therefore, the rejection applied to claim 18 is obviated and allowance of claims 16, 19, and 20 and all claims dependent therefrom is considered to be warranted.

In view of the above, it is submitted that this application is in condition for allowance and a notice to that effect is respectfully solicited.

If any issues remain which may best be resolved through a telephone communication, the Examiner is requested to telephone the undersigned at the local Washington, D.C. telephone number listed below.

Respectfully submitted,

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